

# 2019 Model Year Engine Families

## KHDXC Items Table of Contents

### CBI\_KHDXC\_COMMON\_RFA\_APP\_R00

The items in this document are applicable to the following Engine Families:

KHDXC0.88CEA

KHDXC01.2CEA

KHDXC0.50AXG

KHDXC0.75AXG

KHDXC0.75AXH

KHDXC1.87AEH

KHDXC1.87AEJ

KHDXC1.75AEK

KHDXC1.75AED

KHDXC1.92AED

KHDXC1.87AEG

KHDXC1.82AEF

HHDXC1.87AEE

Model Year Letter of Introduction ..... Pages 1 - 4

Projected Volumes and FEL .....Page 5

Emission Control Devices .....Page 6

Emissions Warranty ..... Page 7-8

Emissions Label Summary.....Page 9



Harley-Davidson Motor Company  
Product Development Center  
Motorcycle Regulatory Compliance, Environmental  
11800 West Capitol Drive  
Wauwatosa, WI 53222-1007

**May 11<sup>th</sup>, 2018**

Director of Certification  
Certification Division  
United States Environmental Protection Agency  
2000 Traverwood Drive  
Ann Arbor, Michigan 48105  
Attention: Donna Ringle, Certification Division

**Confidential - CBI document**

*Application Submittal: 2019 Model Year EPA certification*

Donna:

Enclosed are the electronic materials for the 2019 model year certification of Harley-Davidson Motorcycles as submitted to your Verify/CDX system. We would appreciate your timely support in reviewing our application as Harley-Davidson will begin producing 2019 MY motorcycles on or about July 5th, 2018; (please do not post the Engine Family data to EPA'S web site until September 1<sup>st</sup>, 2018). Each engine family, within CDX, will have a request for approval in the form a pdf. file containing relevant or required information in the format of

Our fee filings for 2019 MY have been submitted and acknowledged by EPA

Harley-Davidson will be certifying the (3) wheeled Trike vehicles, (both Oil and Precision Cooled), with 1868 cc Engines in place of the 1746 cc engines that were used for 2018 model year. The 2018 Engine Families were certified as:

- JHDXC1.75AEE, (Precision Cooled Trike)
- JHDXC1.75AEG, (Oil Cooled Trike)

These Engine Families will be certified for 2019 as:

- KHDXC1.87AEE, (Precision Cooled Trike)
- KHDXC1.87AEG, (Oil Cooled Trike)

In addition to the (3) wheeled Trike vehicles indicated above, the 1868 cc Oil Cooled Engine will be placed in several of the OEM Oil Cooled (2) wheeled vehicles; was Engine Family JHDXC1.75AED for 2018; will be KHDXC1.87AED for 2019 model year.

Harley-Davidson has created (1) new Softail Model (Cruiser style vehicle), for 2019 model year. This vehicle will be sold with an oil cooled 1,868 cc engine. It will be certified within the Custom Vehicle Operations, (CVO), Oil Cooled Touring Engine Family JHDXC1.92AED due to the catalyst being the same for these vehicles

Harley-Davidson continues to use FEL's for the combined HC + NOX tailpipe standard to achieve the overall EPA corporate averaged standard of <.8 g/km. The only difference between 49 state and California configurations is that the California vehicles contain the evaporative emissions canister and associated hoses. Harley-Davidson issues separate labels for the California variant of the engine family. However, from a tailpipe emissions standpoint, engine families are the same in each case.

To assist your processing, here is a brief overview of the engine families for 2019 MY:

KHDXC0.88CEA: (2) Wheeled 883 cc. EFI "Sportsters" with heated O<sub>2</sub> sensors; with ½ catalysts.

Carry-Over

KHDXC01.2CEA: (2) Wheeled 1200 cc. "Sportsters" with heated O<sub>2</sub> sensors; with ½ catalysts.

Carry-Over

KHDXC1.87AEH: (2) Wheeled 1746 cc & 1868 cc Oil Cooled, (OC), Softail with heated O<sub>2</sub> sensors and with (2) catalysts in mufflers.

Carry-Over

KHDXC1.87AEJ: (2) Wheeled 1746 cc & 1868 cc Oil Cooled, (OC), Softail with heated O<sub>2</sub> sensors and (2) three-way catalysts in the header pipes.

Carry-Over

KHDXC1.75AEK: (2) Wheeled 1746 cc Oil Cooled, (OC), Softail with heated O<sub>2</sub> sensors and with (1) three way catalyst.

Carry-Over

KHDXC1.75AED; (2) Wheeled 1746 cc Oil Cooled, (OC), OEM Touring family with heated O<sub>2</sub> sensors and one three-way catalyst.

Carry-Over

KHDXC1.92AED: (2) Wheeled 1868, (OEM), & 1923, (CVO), cc Oil Cooled Touring family. (In addition, there is one 1868 cc Softail model added for 2019), with heated O<sub>2</sub> sensors and one three-way catalyst).

New 3,500 Mini-Cert for 1868 cc Touring model inclusion

New 3,500 Mini-Cert for 1868 cc Softail model inclusion

Carry-Over for the 1923 cc Touring

KHDXC1.92AEF: (2) Wheeled 1868, (was 1746 for 2018), and 1923 cc Twin Cooled, (TC), Touring family with heated O<sub>2</sub> sensors and one three-way catalyst.

Carry-Over

**CONTAINS CONFIDENTIAL BUSINESS INFORMATION**

KHDXC1.87AEE: (3) Wheeled 1868 cc, (was 1746 cc for 2018), Precision Cooled, (PC), with heated O<sub>2</sub> sensors and one three-way catalyst.

**New 3,500 km Mini-Cert**

KHDXC1.87AEG: (3) Wheeled 1868 cc, (was 1746 cc for 2018), Oil Cooled, (OC), with heated O<sub>2</sub> sensors and one three-way catalyst.

**New 3,500 km Mini-Cert**

KHDXC0.50AXG: (2) Wheeled; 494 cc EFI with heated O<sub>2</sub> sensors; liquid cooled.

**Carry-Over**

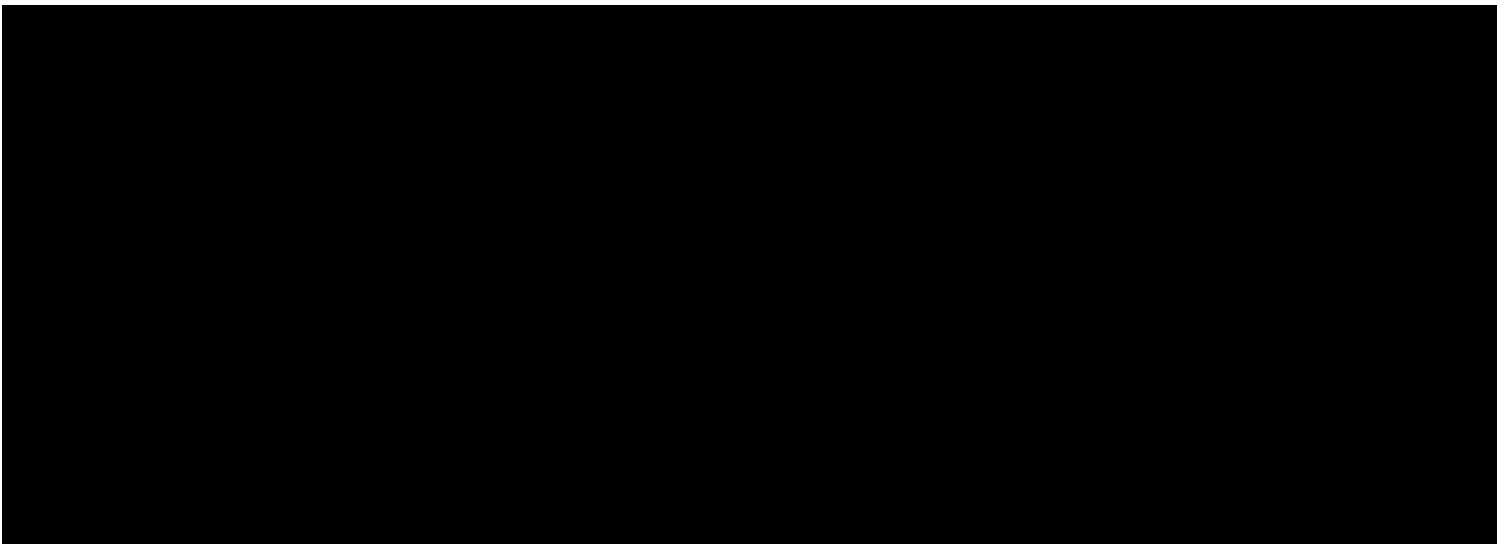
KHDXC0.75AXG: (2) Wheeled; 749 cc EFI with heated O<sub>2</sub> sensors, (1) three way catalyst, and is liquid cooled.

**Carry-Over**

KHDXC0.75AXH: (2) Wheeled; 749 cc EFI with heated O<sub>2</sub> sensors, (1) three way catalyst, and is liquid cooled.

**Carry-Over**

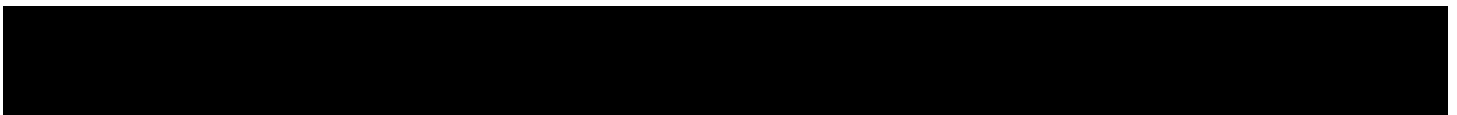
**Permeation Test Results for 2019 Model Year**

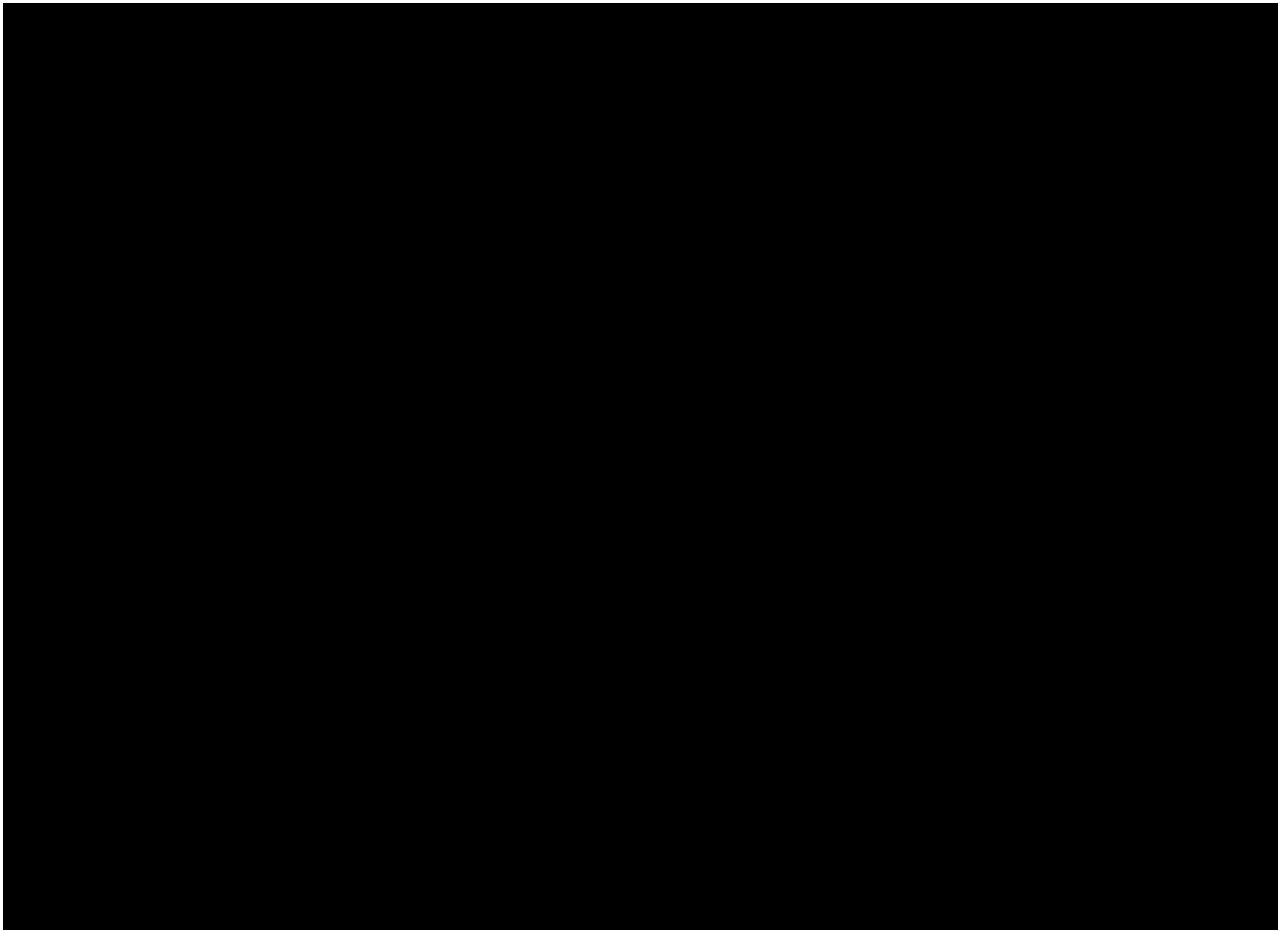


Harley-Davidson declares that its' 2019 MY motorcycles will meet all 2019 applicable MY EPA emissions standards for Class III original equipment on-highway motorcycles as itemized in 40 CFR Part 86 Subpart E, and as conducted according to the testing criteria of Subpart F.

We will supply vehicles upon request for testing if EPA so desires. For purposes of communications related to our application, please feel free to contact us at your convenience.

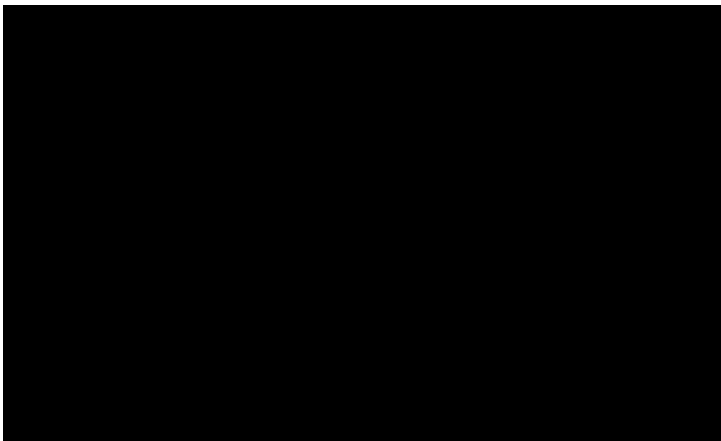
**Adjustability statement and parameters; 2019 Model Year**





Harley-Davidson engages in extensive education of its dealer network to avoid adjustments ordinarily intended for closed course competitions which cause deviations from certified test results. Warnings against such adjustments are placed in the owners' manuals, Parts and Accessories catalogues, and additional educational materials distributed to the dealer network.

We appreciate your assistance and best regards,





			2019 MY Emissions Control Devices										3/1/2018	
MY2019 XL Catalyst Information														
Vehicle	Configuration	P/N	Manufacturer	Engine family	Catalyst Location	# on Vehicle	Precious Metal Composition (Pt/Pd/Rh)	Loading (g/ft³)	Shape and Dimensions (mm)	Substrate Material	CPSI	Type of Catalyst		
MY2019 Softail Family 1; KHDXC1.87AEH														
Vehicle	Configuration	P/N	Manufacturer	Engine family	Catalyst Location	# on Vehicle	Precious Metal Composition (Pt/Pd/Rh)	loading (g/ft³)	Shape and Dimensions (mm)	Substrate Material	CPSI	Type of Catalyst		
MY2019 Softail Family 2; KHDXC1.97AEJ														
Vehicle	Configuration	P/N	Manufacturer	Engine family	Catalyst Location	# on Vehicle	Precious Metal Composition (Pt/Pd/Rh)	loading (g/ft³)	Shape and Dimensions (mm)	Substrate Material	CPSI	Type of Catalyst		
MY2019 Softail Family 3; KHDXC1.87AEK														
Vehicle	Configuration	P/N	Manufacturer	Engine family	Catalyst Location	# on Vehicle	Precious Metal Composition (Pt/Pd/Rh)	Loading (g/ft3)	Shape and Dimensions (mm)	Substrate Material	CPSI	Type of Catalyst		
MY2019 Touring Catalyst Information														
Vehicle	Configuration	P/N	Manufacturer	Engine family	Catalyst Location	# on Vehicle	Precious Metal Composition (Pt/Pd/Rh)	loading (g/ft³)	Shape and Dimensions (mm)	Substrate Material	CPSI	Type of Catalyst		
MY2019 XG500, XG750, & XG750A Catalyst Information														

The following limited warranty applies to the emission control system, is in addition to the MOTORCYCLE LIMITED WARRANTY and NOISE CONTROL SYSTEM LIMITED WARRANTY, and applies only to Harley-Davidson motorcycles certified for sale, registered, and normally operated in the U.S. Refer to the CALIFORNIA EMISSIONS CONTROL.

WARRANTY STATEMENT for additional warranty provisions applicable to California motorcycles.

Harley-Davidson Motor Company warrants to the first owner and each subsequent owner that this vehicle is designed, built, and equipped so as to conform at the time of sale with applicable regulations under section 7521 of Title 42 of the United States Code, and that it is free from defects in materials and workmanship which would cause this motorcycle to fail to conform with applicable regulations for five (5) years from the initial retail purchase and delivery from an authorized Harley-Davidson dealer (or five (5) years from the date the motorcycle is first placed in service, if it is first placed in service as a "demonstrator" or "company" motorcycle prior to delivery), or 30,000 km (18641 mi), whichever occurs first. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period.

THERE IS NO OTHER EXPRESS WARRANTY (OTHER THAN THE SEPARATE MOTORCYCLE AND NOISE LIMITED WARRANTIES) ON THE MOTORCYCLE. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THIS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

The limited warranty period shall begin on the date the motorcycle is delivered to the first retail purchaser or, if the motorcycle is placed in service as a demonstrator or company motorcycle prior to sale at retail, on the date it is first placed in service.

THE FOLLOWING ITEMS ARE NOT COVERED BY THE EMISSION CONTROL SYSTEM LIMITED WARRANTY

1. Failures which arise as a result of misuse, tampering, alterations, accident, acts of nature, or improper or inadequate maintenance as specified in the Owner's Manual.
2. Required maintenance services (as specified in the Owner's Manual) and the replacement of parts (such as spark plugs, fuel and oil filters, etc.) used in required maintenance.
3. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.
4. TO THE FULLEST EXTENT ALLOWED BY LAW, NEITHER HARLEY-DAVIDSON NOR ITS AUTHORIZED DEALERS SHALL BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, TOWING OF THE VEHICLE, LOSS OF MOTORCYCLE USE, COMMERCIAL LOSS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

#### **Items Covered by this Emission Warranty**

The emission control system warranty may cover the following parts if the defect is deemed to be emissions-related:

- Air cleaner assembly
- Cam shaft
- Spark plug
- Ignition coil
- Ignition wires
- Vapor valve
- Catalytic converter
- Crankcase breather
- MAP sensor
- TMAP sensor
- Intake air temperature sensor
- Throttle position sensor
- Fuel injectors



- Induction module or throttle body
- Engine temperature sensor
- Electronic control unit
- Oxygen sensors

**Fuel Tank** (non-cosmetic failures only)

- Leaks
- Fuel vapor separator
- Fuel cap

If used on the above: hoses, clamps, fittings, tubing, sealing gaskets and mounting hardware.

Detailed instructions for proper maintenance and use of this motorcycle, including the time and/or mileage intervals at which such maintenance is to be performed, may be found in this Owner's Manual under [Service Records](#).

**Other Rights**

This limited warranty gives you specific legal rights, and you may have other rights which vary from state to state.

**Recommendations for Required Maintenance**

It is recommended that any emission system maintenance be performed by an authorized Harley-Davidson dealer using genuine Harley-Davidson replacement parts. However the maintenance, replacement or repair of the emissions control system may be performed by any other qualified service outlet or individual. Non-genuine Harley-Davidson parts may be used only if such parts are certified to comply with U.S. Environmental Protection Agency Standards.

Part No	Model	"A" Engine Size	"B" Engine Family	"C" Model Year	"D" FEL	"E" Control Systems	"F" Permeation Family	"G" Octane Req.	"H" Muffler Identifier	"I" RPM
14001746	FLHR-Road King	1746	KHDXC1.75AED	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746	2761
14001768	FLHTCU-Electra Glide Ultra Classic	1746	KHDXC1.75AED	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746	2761
14001767	FLHX-Street Glide	1746	KHDXC1.75AED	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746	2761
14001767	FLTRX-Road Glide	1746	KHDXC1.75AED	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746	2761
14001768	FLHP-Road King Police	1868	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001768	FLHTP-Police Electra Glide	1868	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001748	FLHXS-Street Glide Special	1868	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001748	FLTRXS-Road Glide Special	1868	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001748	FLHRXS-Road King Special	1868	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001643	FLTRXSE CVO Road Glide	1923	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1923	2613
14001649	FLHXS- CVO Street Glide	1923	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1923	2668
14001713	FXDRS-FXDR 114	1868	KHDXC1.92AED	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL02	91	HARFXDR1868	2475
14001662	FLRT-Free Wheeler	1868	KHDXC1.87AEG	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2613
14001663	FLHTCUTG -Tri Glide Ultra	1868	KHDXC1.87AEE	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001751	FLHTK-Ultra Limited	1868	KHDXC1.92AEF	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001751	FLHTK-Ultra Limited Shrine Edition	1868	KHDXC1.92AEF	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001751	FLHTKL-Ultra Limited Low	1868	KHDXC1.92AEF	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001751	FLTRU-Road Glide Ultra	1868	KHDXC1.92AEF	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1746/HARFLT1868	2761
14001652	FLHTKSE-CVO Ultra Limited	1923	KHDXC1.92AEF	2019	0.7	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARFLT1923	2668
14001714	FLHC Heritage Classic	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001707	FLHCS Heritage Classic 114	1868	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2613
14001720	FLFB Fat Boy	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001719	FLFBS Fat Boy 114	1868	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2613
14001716	FLDE Deluxe	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001711	FLSL Slim	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001712	FXBR Breakout	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001718	FXBRS Breakout 114	1868	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2613
14001708	FXBB-Street Bob	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001710	FXLR-Low Rider	1746	KHDXC1.87AEH	2019	0.7	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARFX1746/1868	2761
14001717	FXFB-Fat Bob	1746	KHDXC1.87AEJ	2019	1.4	SFI, 2 HO2S, 2 TWC	KHDXPMETAL02	91	HARFXF1746/1868	2761
14001715	FXFBS-Fat Bob 114	1868	KHDXC1.87AEJ	2019	1.4	SFI, 2 HO2S, 2 TWC	KHDXPMETAL02	91	HARFXF1746/1868	2613
14001709	FLSB - Sportglide	1746	KHDXC1.75AEK	2019	0.8	SFI, 2 HO2S, TWC	KHDXPMETAL02	91	HARFD1746	2761
14001780	XL 1200C-1200 Custom	1200	KHDXC01.2CEA	2019	0.6	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARXL883/1200	3025
14001780	XL 1200X-Forty-Eight	1200	KHDXC01.2CEA	2019	0.6	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARXL883/1200	3025
14001778	XL1200CX-Roadster	1200	KHDXC01.2CEA	2019	0.6	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARXL883/1200	3025
14001784	XL 1200NS-Iron 1200	1200	KHDXC01.2CEA	2019	0.6	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARXL883/1200	3025
14001780	XL 1200XS-Forty-Eight Special	1200	KHDXC01.2CEA	2019	0.6	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	91	HARXL883/1200	3025
14001779	XL 883L-Superlow	883	KHDXC0.88CEA	2019	0.8	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	89	HARXL883/1200	3300
14001786	XL 883N-Iron 883	883	KHDXC0.88CEA	2019	0.8	SFI, 2 HO2S, 2TWC	KHDXPMETAL02	89	HARXL883/1200	3300
14001676	XG500-Harley-Davidson Street 500	494	KHDXC0.50AXG	2019	2.1	SFI, 2 HO2S	KHDXPMETAL03	87	HARXG500/750	5037
14001674	XG750-Harley-Davidson Street 750	749	KHDXC0.75AXG	2019	0.3	SFI, 2 HO2S, TWC	KHDXPMETAL03	87	HARXG500/750	4400
14001675	XG750A-Street Rod	749	KHDXC0.75AXH	2019	0.3	SFI, 2 HO2S, TWC	KHDXPMETAL03	91	HARXG750B	4813

